

CENC KNOWLEDGE TRANSLATION, DISSEMINATION AND COLLABORATION

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CENC Knowledge Translation (KT)

Ron Seel, PhD, Executive Director of the VCU Center for Rehabilitation Sciences and Engineering (**CERSE**) is leading the KT efforts, leveraging practicing clinical TBI faculty from VCU and McGuire VAMC.

- 1) Developing **Clinical/Scientific Relevance Statements** (BLUF) from all CENC publications (Professionals).
- 2) Reviewing and disseminating **Plain Language Abstracts** developed for all CENC publications (Public).
- 3) Developing **Post Cards** using the plain language abstracts (Public).
- 4) Developing **Online, Self-Paced Course** from 15 clinically meaningful CENC publications (Public).
- 5) Updating and annotating **CENC Scientific Bibliography** to include all available abstracts, articles and presentations by CENC researchers from 2013-present (Professionals).
- 6) Use CENC **Social Media Platform**, including new website, to disseminate #'s 1-5 above (All).

CENC KT Presentation at National Neurotrauma Conference

- The evening of June 30th at the Wyndham Hotel (Pittsburgh).
- Dinner KT Presentation for all CENC stakeholders and future collaborators.
- Presenters include Drs. Cifu, Kenney, Wilde, Walker, Pugh and Dismuke.



CENC Website

- Partnering with VCU Web Design department to ensure secure, compliant website.
- Website (www.cencstudy.org) will have both public and private domains.
- Public side will have **Information and Help** tab on homepage that will open to KT Center, offer existing public source resources and have linkages to external resources.
- Private side will include: Study Dashboards; Subject Management System; Study Operation Tabs.

**CENC** Chronic Effects of Neurotrauma Consortium

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Caring for our veterans and service members by studying the long-term effects of mild traumatic brain injury (mTBI)

Established in 2014, the Chronic Effects of Neurotrauma Consortium (CENC) is a coordinated, multi-center collaboration linking basic science, translational and clinical neuroscience researchers from the VA, military, and academia to effectively address the long-term effects of mild traumatic brain injury (mTBI) and its diagnosis and treatment.

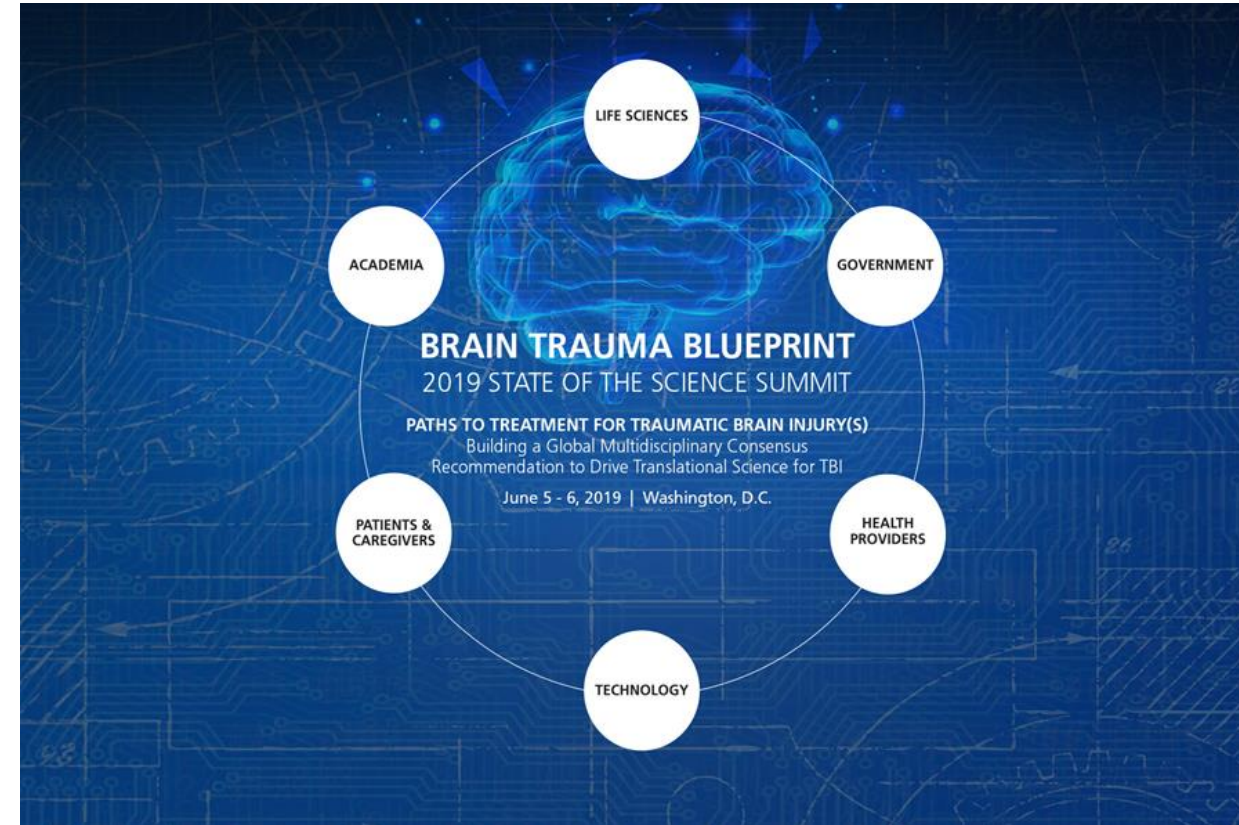
CENC Dissemination

- Total Dissemination to date:
 - Publications: 69 [Note: All positive/negative findings addressed]
 - Platform and Keynote Presentations: 63
 - Posters: 109
- Number of people reached by Social Media:
 - Facebook: >1,400 interactions in the last 90 days.
 - Twitter: >1,750 impressions in the last 90 days.
- Multiple presenters at upcoming National Neurotrauma Conference and MHSRS (Wilde, Kenney, Walker, Dismuke).
- Representatives from CENC attended Brain Injury Awareness Day on Capitol Hill presented by the Congressional Brain Injury Task Force.



CENC Dissemination: Cohen Veterans Bioscience

- CENC Leadership participated in Cohen Veterans Bioscience 2019 State of the Science Brain Trauma Blueprint as members of the scientific committee, presenters and panel members
- David Cifu - Dissemination, Clinical Trials
- Lisa Wilde – Biomarker Development
- Kim Kenney – Biomarker Development
- Mary Jo Pugh – Phenotypes/Biotypes, Epidemiology
- Fiona Crawford – Preclinical and Translational Science
- Kristine Yaffe – Epidemiology
- Jessica Gill – Biomarker Development



Biomarker Core - Dissemination & Plans

- Report of exosomal t-tau, p-tau and NFL results presented as oral presentation at Neurology in MAY 2019.
- TBI biomarker review chapter submitted to Brain Injury Medicine Board Review textbook in MAR 2019.
- Manuscript of full candidate biomarker panel submitted to *Neurology* in JUN 2019.
- Correlation of Biomarker and Imaging in collaboration with CENC Imaging core to be presented as poster presentation at Neurotrauma in JUL 2019 and oral presentation at MHSRS in AUG 2019.
- MiRNA analysis to be presented at MHSRS as a Plenary presentation at MHSRS in AUG 2019.
- MiRNA manuscript to be submitted to *Neurology* in JUL 2019.
- Multiplex ultrasensitive immunoassay validation in collaboration with NIH and MSD to be presented as poster presentation at Neurotrauma in JUL 2019.
- Participated in Cohen VA State of the Science Biomarker panel as Scientific Committee members JUN 2019 with manuscript of working group results in process.
- Presentation of CENC biorepository at Neurotrauma 30 JUN 2019 for potential collaborators of TBI biomarkers.
- Neuroendocrine and APOE data in FITBIR; Biomarker discovery project results being uploaded into FITBIR once CENC analyses complete and results published (Fall 2019)

Imaging Core - Dissemination & Plans

- Upcoming conference presentations that include CENC-related work will be presented at 1) National Neurotrauma Society (Pittsburgh, June/July); 2) TBI symposium organized by Inga Koerte (Munich, July), and MHSRS (Florida, August).
- Repeat analysis of findings from snapshot 1 with larger dataset underway.
- Results of post-harmonization on analysis underway.
- SLC VA (Wilde, Pugh) is preparing a VA REAP application with a focus on post-traumatic headache and pain. This would utilize the CENC cohort for phenotyping work which is a cornerstone and focus of this application (would utilize Data Core and Imaging Core work).
- Submitting a translational project application on post-traumatic headache to DoD, which has both an experimental porcine model and a clinical trial of ketogenic diet. Pugh is the PI and Wilde is the leader of the imaging-focused project. Kenney, Gill, Tate, Hinds and Jaramillo are also involved. This would also leverage CENC-developed data and resources.

Neuropath Core – Integration of CENC Brain Bank

- Integrating the CENC Brain Bank with existing Brain Banks at BU/Boston VA to leverage data.
 - Coordinating research efforts to study PTSD by using a selection of trauma-exposed CENC participants in PTSD related studies.
 - PTSD and other brain banks provide controls and other cases for CENC based studies.
- Pending Grants leveraging CENC Brain Bank
 - Linked VA Merit: I01BX004613 CTBI: CBI Tauopathy in Mice and Human: Neurodegeneration after Repetitive Neurotrauma: Mechanisms and Biomarker Discovery (Ann McKee, PI) from Neuropathological alterations after Blast TBI funding program [2019-2023] \$1,000,000.
 - U54 proposal: NINDS/NIA U54NS115266 - Traumatic Brain Injury and Repetitive Head Impacts: Contributions to AD/ADRD and CTE Neuropathology and Resulting Clinical Syndromes (Ann McKee, PI) [2019-2024] \$6,250,000
- Manuscript in progress: *Astrocyte remodeling of the perivascular clearance system following repeated neurotrauma, blast injury, and chronic traumatic encephalopathy.*

Study 4 (Epidemiology) Dissemination

- Multiple publications in high-impact journals with press-releases and presentations at national and international conferences for neurology, dementia, and TBI.
- **Cohen Veterans Bioscience** 2019 State of the Science Summit (Pugh, Yaffe).
- Write-up of results and interview with Dr. Yaffe in **VAntage Point**, the official VA blog.
- Two VA Health Services Research and Development **CyberSeminars** disseminating results to a large national clinical and research audience.
- Future analyses: Post-traumatic headaches, Quality of care for mTBI in DoD and VA, Opioid treatment acutely after DoD TBI and long-term outcomes.

Million Veteran Program Collaboration

- MVP provided a POC listing and called into one of Leadership Working Group Calls to explain their study to CENC personnel.
- Drs. Cifu and Gaziano met in Boston (VA TBI and Dementia conference) and shared findings with VA researchers.
- All of our study sites with co-located MVP sites have made contact with their counterparts and exchanged recruiting materials.
- Two of our Study 1 sites (Tampa/Houston) do their blood draw within the MVP site. Tampa notes that 99% of their participants have also enrolled in the MVP.

Study #1 = Longitudinal Cohort Study (Walker)



Intervention Trial: Human Growth Hormone Study

- Coordination call between Drs. Cifu/Walker and two PIs (Ricardo Jorge and Jose Garcia) from proposed CSP intervention trial (2020).
 - Assist them with the writing of the grant proposal.
 - Assist them with introductions to Endocrinologists at locations where our Study 1 VA sites are located.
 - Sharing of previously collected data.
 - Assistance with recruiting at sites collocated with our Study 1 sites.

DVBIC Partnership

- Open and regular discussions between Drs. Cifu/Walker and DVBIC leadership.
- Six year track record of working together across Longitudinal Study sites with both DVBIC and CENC personnel (Richmond, Tampa, San Antonio, Minneapolis, Ft. Belvoir)
- DVBIC personnel have been instrumental in assisting our Study 1 sites.



CENC PI Level Collaborations

- Collaboration with Pashtun Shahim (NINDS, NIH) to correlate plasma NFL with DTI sequences in large cohort of TBI patients at various stages (TRACK-TBI, CNRM acute TBI at NIH (Larry Latour) Swedish hockey players (Zetterberg), NICOE chronic mTBI) under consideration for CENC participation.
- Correlation of exosomal tau biomarkers in CENC Study 1 participants with TBI and sleep apnea in collaboration with LCDR Kent Werner (USUHS) and Risa Richardson to be presented as poster presentation at MHSRS in AUG 2019.
- Collaboration with Fiona Crawford et al at Roskamp Insititute for correlation of lipidomic biomarkers with exosomal and plasma protein biomarkers and APOE genotypes to leverage external CDMRP funding.
- Collaboration with University of Utah and SLC VA for CDMRP project grant to study biomarkers of post-traumatic headache in human and animal clinical trial of ketogenic diet for PTH (PI Candace Floyd) for submission in JUL 2019.
- Collaboration for grant subcontract to store specimens in CENC biorepository from Houston VA merit grant renewal (PI Randy Scheibel) for GWAS and biomarker analysis submitted MAY 2019.
- Plasma biomarkers from Study 49* under analysis under external CDMRP grant funding in collaboration with MSD.

CENC PI Level Collaborations

- Partnering with Rocky Mountain Mental Illness Research, Education and Clinical Center: Integrate findings into suicide prevention.
- Partnering with Durham VA Million Veteran Program: Integrate findings into suicide prevention research.
- Partnering with National Center for Veterans Research (University of Utah): Integrate findings into local and national PTSD treatment programs.
- NIH RO1 grant for CTE biomarkers and genetics in collaboration with VCU (Bill Walker PI) submitted APR 2019.
- NIH PCORI grant for PTSD intervention efficacy and choice in Veterans with co-occurring mTBI (Dave Cifu PI) submitted APR 2019.
- Imaging Core is working with CARE and TRACK-TBI investigators on ENIGMA R01 application, which would allow meta-analyses of data across the three consortia.
- CENC investigators (Wilde, Stone, Tate) are involved in collection of normative imaging data on uninjured Veterans/ADSMs which can be used to extend CENC data (this is funded by Cohen Veterans Bioscience) and serve as additional comparison data.
- Phantom work developed as part of CENC has now expanded considerably, with numerous industry, academic and government partners.

Questions